UNIVERSITI TEKNOLOGI MARA

CLASSIFICATION OF STUDENT ACADEMIC PERFORMANCE BY USING NAÏVE BAYES

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STUDENT DECLARATION

I certify that this thesis and the project to which it refers is the product of my own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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ABSTRACT

Student academic performance can be identified as student's ability to perceived and convey their learning outcomes through both assignment and examination. Both usually will be represent as Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA) as a definite result for their performance. There are a lot of factors influence student academic performance, in this project, several new independent variables that has not been use and explore are used in the prediction model for student academic performance. The Artificial Intelligence (AI) strategy used is Naïve Bayes technique which has the best performance in learning speed, hidden values consideration, overfitting dealings, incremental learning attempt, ability explanation, and in handling model parameter compared to other techniques. In this project, agile approach is used as a main framework in order to satisfy the customer by early and continous delivery of valuable software. Agile methodologies help groups respond to unpredictability through incremental, iterative work rhythms and empirical feedback. All data is collected by survey within scope of UiTM Jasin with 140 respondents from faculty of computer & mathematical sciences with variables factors affecting performance such as study skills, gender, procrastination, material, and average weekly study hour. Procrastination and study skill are new independent variables to be test which never being used by previous research as it has potential to influence student performance. 80% of the data collected were used as training data, and 20% were for the new data to be tested. 31 prediction models were produce from the combination of variables. Among 31 prediction models, the best prediction model for student academic performance with accuracy percentage up to 58.04% from the 112 data learnt. For future prospect, all independent variable used in this model can be improve and expended with another AI technique such as Neural Network and Support Vector Machine. The overall result for the system functionality is working well at its best. This system able to predict the expected outcome as data is advanced with appropriate variable. In near future, more potential from this research can be extended in term of using different technique and independent variables used to increase the accuracy of prediction.

Keywords: Academic Performances, Artificial Intelligence, Naïve Bayes, Prediction

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